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PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS: CROSS-SECTORAL ISSUES

ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS

(including Prevention of illegal international traffic in toxic and dangerous products 1/)

(Section II, Chapter 11 of Agenda 21)

Report of the Secretary-General of the Conference

INTRODUCTION

1. This document has been prepared by the Secretary-General of the Conference in response to the decision 3/23 of the Preparatory Committee taken at its third session as set out in document A/CONF.151/PC/WG.II/L.21/Rev.1. It is based on guidance provided by the Preparatory Committee on the structure of Agenda 21, as contained in A/CONF.151/PC/L.49*. All texts quoted from the PrepCom III document, A/CONF.151/PC/WG.II/L.19/Add.3/Rev.1, are to be found inserted between double asterisks (** < > **) with the reference to the specific relevant paragraph number. Where the text has been modified, the double asterisks have been left out and the words "Derived from" have been inserted before the reference to paragraph numbers.

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2. (Derived from p. 1-2) ‹ A substantial use of chemicals is essential to meet the social and economic goals of the world community and today's best practice demonstrates that they can be widely used, cost effectively, and with a high degree of safety. However, a great deal remains to be done to extend the environmentally sound management of toxic chemicals, to undo the mistakes of the past, and to harness the carefully chosen use of chemicals to the principles of sustainable development and improved quality of life in every country and every community across the globe. One of the major problems here is the lack of sufficient scientific information for the assessment of risks of a great number of chemicals. Another problem is the lack of resources to assess chemicals for which data are at hand.

3. Other problems are related to the fact that the introduction of chemicals and of chemically-related industries in developing countries, which still lack the infrastructure and trained human resources for chemical safety, is often carried out on a basis which is far from environmentally-sound. ›

4. (Derived from p. 3) ‹ Gross chemical contamination, with grave damage to human health, genetic structures and reproductive outcomes, and the environment, has continued in recent times in some of the world's most important industrial areas. Restoration will require major investments and development of new techniques. The importance of long-range transport of pollution, with effects which can extend even to the fundamental chemical and physical processes of the Earth's atmosphere and climate, is only recently becoming understood. ›

5. (Derived from p. 4) ‹ A considerable number of international bodies are involved in work on chemical safety. In many countries work-programs for the promotion of chemical safety are in place. Such work has international implications as chemical risks do not respect national boundaries. However, a significant strengthening of both national and international efforts is needed to achieve an environmentally sound management of chemicals. ›

6. Five programme areas are proposed with the following objectives:

a) (Derived from p. 5) ‹ Beneficial use of chemicals for sustainable development and safe manufacturing use, handling and disposal with minimum risks to health and the environment.

b) [Prevention of the uncontrolled exports of banned or severely restricted chemicals to developing countries which have neither the know-how, nor the capacity to manage such chemicals.]

c) [Promotion of specific procedures and infrastructure development to enable countries to take well informed decisions on the management of toxic chemicals.]

d) [Adoption of precautionary and anticipatory strategies for environmentally sound management of chemicals in each country not later than the year 2000 with implementation as soon as possible thereafter]. ›

7. (Derived from p. 7-9) < The five programme areas are together dependant for their successful implementation on, intensive international work and improved coordination of current international activities, as well as on the identification and application of technical, scientific, educational and financial means, in particular for developing countries. To varying degrees, the programme areas involve hazard assessment (based on the intrinsic properties of chemicals), risk assessment (including assessment of exposure), risk acceptability and risk management.

8. The collaboration on chemical safety between UNEP, ILO and WHO in the IPCS should be the nucleus for international cooperation on environmentally sound management of toxic chemicals. All efforts should be made to strengthen this programme. Cooperation with other programmes, and particularly the OECD and EC chemicals programmes, should be promoted.

9. Increased coordination of United Nations agencies and other international organizations involved in chemicals assessment and management should be further promoted. Within the framework of IPCS, an intergovernmental meeting, convened by the Executive Director of UNEP, was held in London in December 1991 to further explore this matter. (Recommendations of the meeting will be summarized in Addendum I to this document). >

10. ** (p. 10) < The broadest possible awareness of chemical risks is a prerequisite for achieving chemical safety. The principle of community right to know should therefore, be recognized and the industry initiative on responsible care and product stewardship should be developed and promoted. Large industrial enterprises including transnational corporations, should apply adequate standards of operation in all countries in order not to damage human health and the environment. > **

PROGRAMME AREAS

A. EXPANDING AND ACCELERATING THE INTERNATIONAL ASSESSMENT OF CHEMICAL RISKS

Basis for Action

11. (Derived from p. 11) < The assessment of risks to human health and environment that a chemical may cause is a prerequisite to planning for its safe and beneficial use. Out of the approximately 100,000 chemical substances in commerce and the thousands of substances of natural origin with which human beings come into contact, many substances appear as pollutants and contaminants in food, commercial products and the various environmental media. Fortunately, the exposure to most chemicals is rather limited as most are used in very small amounts. Some 1,500 chemicals cover over 95 per cent of the total world production. But a serious problem is that even for a great number of high volume production chemicals, crucial data for risk assessment are often lacking. > Within the framework of the OECD Chemicals Programme such data are now being generated for a number of these chemicals.

12. ** (p. 12) ‹ Risk assessment is resource-intensive. It could be made cost-effective by strengthening international cooperation and better coordination, thereby making the best use of available resources and avoiding unnecessary duplication of efforts. › **

Objectives

13. (Derived from p. 13) ‹ Strengthening of international risk assessment. About 500 priority chemicals or groups of chemicals, including major pollutants and contaminants of global significance, should be assessed by the year 2000, using current selection and assessment criteria. ›

14. (Derived from p. 14 b) ‹ Produce guidelines for acceptable exposure for a greater number of substances, based on peer review and scientific consensus distinguishing between health or environment based exposure limits and those relating to socio-economic factors. ›

Activities

Management-related:

15. Relevant international organizations, with active participation of Governments, 2/ and industry should:

a) (Derived from p. 14 a) ‹ Strengthen and expand programmes on chemical risk assessment within the United Nations system (IPCS: UNEP, ILO, WHO; FAO), together with other organizations including OECD, based on an agreed approach to data quality assurance, application of assessment criteria, peer review and linkages to risk management activities. ›

b) ** (p. 14 e) ‹ Promote mechanisms to increase collaboration amongst government, industry, academia and relevant NGOs, involved in the various aspects of risk assessment of chemicals and related processes, in particular promoting and coordinating research activities to improve understanding of the mechanisms of action of toxic chemicals. › **

c) (Derived from p. 14 k) ‹ Encourage the development of procedures for countries to exchange their assessment reports on chemicals with other countries' for use in national chemical assessment programmes. ›

Data and Information:

16. Governments and industry, with the cooperation of relevant intergovernmental and non-governmental organizations, and appropriate bodies of the United Nations should:

a) ** (p. 14 c) ‹ Give high priority to hazard assessment of chemicals, that is, of their intrinsic properties as the appropriate basis for risk assessment. › **

b) ** (p. 14 j) ‹ Generate data necessary for assessment, building on, inter alia, IPCS (UNEP, WHO, ILO), OECD and EC programmes. Industry should participate actively. › **

17. Industry should provide data for substances produced that is needed specifically for the assessment of potential risks to human health and the environment. Such data should be made available to relevant national competent authorities and international bodies involved in hazard and risk assessment. (Ref. also Agenda 21 chapter on "Providing data and information for sustainable development").

International and Regional Cooperation and Coordination:

18. Relevant international organizations with active participation of Governments and industry should:

a) ** (p. 14 g) ‹ Develop criteria for priority-setting of chemicals of global concern for assessment. › **

b) ** (p. 14 d) ‹ Review strategies for assessment of exposure and environmental monitoring to allow for the best use of available resources, to ensure compatibility of data and to encourage coherent national and international strategies for exposure assessment. › **

Means of Implementation

Financial and Cost Evaluation:

19. Most of the data and methods for chemical risk assessment is generated in the developed countries and an expansion and acceleration of the assessment work will call for a considerable increase in research and safety testing by industry and research institutions. The cost projections address the needs to strengthen the capacities of relevant United Nations bodies and are based on current experience in IPCS. It should be noted that there are considerable costs, often not possible to quantify, that are not included. These comprise costs to industry and Governments of generating the safety data underlying the assessments, 3/ the costs to Governments in providing background documents and draft assessment statements to IPCS, IRPTC and OECD. They also include the cost of accelerated work in non-United Nations bodies such as OECD and EC.

20. The estimated international costs, about US$ 30 million annually, are based on the assumption that a complete evaluation of 500 chemicals will be made in the period 1993-2000.

Scientific and Technological Means:

21. Major research efforts should be launched in order to (Derived from p. 14 f) ‹ improve methods for assessment of chemicals for work towards a common framework for risk assessment and improve procedures for using toxicological and epidemiological data to predict the effects of chemicals on human health and the environment, in order to enable decision makers to adopt adequate policies and measures to reduce risks posed by chemicals. ›

Activities include:

a) (Derived from p. 14 1) ‹ Strengthen research for substitution of toxic chemicals and alternative clean technologies. ›

b) (Derived from p. 14 h) ‹ Promote research on, and validation of, methods as a replacement for those using test animals, thus reducing the use of animals for testing purposes. ›

c) ** (p. 14 i) ‹ Promote relevant epidemiological studies with a view to establishing a cause-effect relationship between exposure to chemicals and the occurrence of certain diseases. › **

Human Resource Development:

22. International organizations with the participation of Governments and non-governmental organizations should launch training and education projects involving women and children, who are at greatest risk in order to enable countries, and particularly developing countries, to make maximum national use of international assessments of chemical risks.

Capacity building:

23. (Derived from p. 40 c) ‹ International organizations [should, building on past, present and future assessment work at the international level, support countries, particularly developing countries to develop and strengthen risk assessment capabilities at national and regional levels to minimize, and when appropriate prevent risk in the manufacturing and the use of toxic and hazardous chemicals]. › Technical cooperation and financial support or contribution in kind should be given to activities aimed at expanding and accelerating the international assessment of chemical risks to enable the best choice of chemicals. Proposals on capacity building for inter alia risk assessment in countries are made under Programme area E.

B. HARMONIZATION OF CLASSIFICATION AND LABELLING OF CHEMICALS

Basis for Action

24. (Derived from p. 15) ‹ Adequate labelling of chemicals, based on assessed hazards to health and environment, is the simplest and most efficient way of indicating how to handle and use chemicals safely. ›

25. ** (p. 16, 17) ‹ For the safe transport of dangerous goods, including chemicals, a comprehensive scheme elaborated within the United Nations system is in current use. This scheme takes mainly into account the acute hazards of chemicals.

26. Globally harmonized classification and labelling systems are not yet available to promote the safe use of chemicals at the workplace, in the home, etc. Classification of chemicals can be made for different purposes and is a particularly important tool in establishing labelling systems. › **

27. (Derived from p. 18) ‹ [Within the framework of IPCS, in consultation with other concerned bodies, the process of harmonizing existing classification systems has been initiated]. ›

Objective

28. (Derived from p. 19) ‹ A globally harmonized classification and compatible labelling system including easily understandable symbols should be available by the year [2000]. ›

Activities

Management-related:

29. (Derived from p. 20 c) ‹ International organizations with active participation of Governments and non-governmental organizations should launch a project with a view to establishing and elaborating a harmonized classification and compatible labelling system for chemicals ** (p. 21) ‹ for use in all United Nations languages [including adequate pictograms]. Such a labelling system should not lead to the imposition of unjustified trade barriers. › ** The new system should draw on current systems to the greatest extent possible; it should be developed and implemented in steps and aim at compatibility with labels of various applications (such as pesticides and transport) where labelling is used.

30. Data and information:

** (p. 20 a) ‹ International bodies including, inter alia, IPCS (UNEP, ILO and WHO), FAO, and with the cooperation of IMO, OECD and EC should establish a coordinating group to:

a) Make comparative studies of existing classification and labelling systems as a starting point for establishing general principles for a globally harmonized system; › ** Due account should be taken of international studies already carried out.

b) ** (p. 20 b) ‹ Draft proposals for standardization of hazard communication terminology and symbols in order to enhance risk management of chemicals, facilitate international trade and make it easier to translate the information into the end user's language. › **

Means of Implementation

Financial and Cost Evaluation:

31. A step-by-step international cooperative approach to harmonize the main existing systems, with subsequent or concurrent adoption of the resulting system, wholly or in part, by all member States before the year 2000, would limit additional costs to the work required to reconcile these systems and to assist developing countries in implementing compatible classification and labelling schemes. Around US$ 3 million would be needed annually to strengthen the capacities of international organizations to coordinate the

work of harmonization. Additional costs for technical assistance to strengthen national capacities related to work to be undertaken under this programme area are included in the costing of programme area E.

32. The benefits from these expenditures would far exceed the costs.

Humans Resource Development:

33. National Governments and institutions and non-governmental organizations, with the collaboration of appropriate organizations and programmes of the United Nations should launch training courses and information campaigns to facilitate the understanding and use of a new harmonized classification and compatible labelling system for chemicals.

Capacity Building:

34. Strengthening of national capacities for management of chemicals, including national adaption to new classification and labelling systems, is proposed under Programme area E.

C. INFORMATION EXCHANGE ON TOXIC CHEMICALS AND CHEMICAL RISKS

Basis for action

35. The following activities are related to information exchange on the benefits as well as the risks associated with the use of chemicals and are aimed at enhancing the sound management of chemicals through the exchange of scientific, technical, economic and legal information.

36. (Derived from p. 22) ‹ The London guidelines for the Exchange of Information on Chemicals in International Trade are a set of guidelines adopted by Governments with a view to increasing chemical safety through the exchange of information on chemicals. › Special provisions have been included in the Guidelines with regard to the exchange of information on banned and severely restricted chemicals.

37. (Derived from p. 23-24) ‹ The export to developing countries of chemicals which have been banned in producing countries or whose use has been severely restricted [in some industrialized countries] has been the subject of concern as some importing countries lack the ability to assure safe use, due to inadequate infrastructure for controlling the availability, storage, formulation and disposal of chemicals.

38. In order to address this issue, provisions for Prior Informed Consent (PIC) procedures were introduced in 1989 in the "London Guidelines for the exchange of information on chemicals in International Trade" (UNEP) and in the "International Code of Conduct on the Distribution and Use of Pesticides" (FAO). In addition a joint FAO/UNEP programme has been launched for the operation of the PIC procedures for chemicals including the selection of chemicals to be included in the PIC procedure and preparation of PIC decision guidance documents. The ILO chemicals convention calls for communication between exporting and importing countries when hazardous chemicals have been prohibited for reasons of safety and health at work. [Within the GATT

framework, negotiations are being pursued with a view to create a binding instrument on products banned or severely restricted in the domestic market]. ›

39. Notwithstanding the importance of the PIC procedure, information exchange on all potentially toxic chemicals is necessary.

Objectives

40. ** (p. 25-26) ‹ Intensified exchange of information on chemical safety between all involved parties.

41. Full implementation of the Prior Informed Consent procedure [including mandatory applications through legally binding instruments] contained in the amended London Guidelines and in the FAO International Code of Conduct by the year [2000]. › **

Activities

Management-related:

42. Governments and industries of countries exporting chemicals as well as international organizations, should:

a) Strengthen national institutions responsible for information exchange on toxic chemicals and promote creation of national centres where these do not exist.

b) ** (p. 27 d) ‹ Strengthen international institutions and networks such as the IRPTC, responsible for information exchange on toxic chemicals. › **

c) (Derived from p. 27 b) ‹ Establish technical cooperation with and provide information to other countries, especially those with shortages of technical expertise, including training in the interpretation of relevant technical data, such as Environmental Health Criteria Documents and Health and Safety Guides (published by the International Programme on Chemical Safety - IPCS), IARC Monographs (published by the International Agency for Research on Cancer), Decision Guidance Documents (data provided through the FAO/UNEP joint programme on PIC) and those submitted by industry or by other sources. ›

d) ** (p. 27 c) ‹ [Invite UNEP and FAO to work expediously towards the conclusion of the necessary legally binding instrument.] › **

Data and Information:

43. Governments and industries of countries exporting chemicals as well as international organizations should:

a) Assist in the creation of national chemical information systems in developing countries and improve access to existing international systems.

b) (Derived from p. 27 e) ‹ Improve databases and information systems on toxic chemicals, including emission inventory programmes, through provision of training in the use of these systems as well as soft- and hardware and other facilities. ›

c) (Derived from p. 27 a) ‹ Provide knowledge and information on severely restricted or banned chemicals to importing countries to enable them to judge and take decisions on whether to import, and how to handle, these chemicals and establish joint responsibilities in trade of chemicals between importing and exporting countries. ›

d) Provide data necessary to assess risks to human health and the environment of possible alternatives to banned or severely restricted chemicals.

44. (Derived from p. 28) ‹ United Nations organizations should provide as far as possible, all international information material on toxic chemicals in all United Nations languages. ›

International and Regional Cooperation and Coordination:

45. (Derived from p. 27 f) ‹ Governments and industries of countries exporting chemicals, as well as international organizations, should cooperate in strengthening and expanding the network of designated national authorities for the exchange of information on chemicals and establish a technical exchange programme to produce a core of trained personnel within each participating country. ›

Means of implementation

Financing and Cost Evaluation:

46. Annual international financing of about US$ 10 million will be needed: US$ 7 million for technical assistance and US$ 3 million for strengthening international institutions. 4/

Capacity Building:

47. Proposals on capacity building for, inter alia, national activities concerning information exchange are made under Programme area E.

D. ESTABLISHMENT OF RISK REDUCTION PROGRAMMES

Basis for Action

48. (Derived from p. 29-31) ‹ There are often alternatives to hazardous chemicals currently in use. Thus, risk reduction can sometimes be achieved by using other chemicals or even non-chemical technologies. The classical example of risk reduction is the substitution of harmless or less harmful substances for harmful ones. Setting standards for chemicals in each environmental media (food, water, consumer goods, etc), is another example of risk reduction. In a wider context risk reduction involves international approaches to reduce the risks of selected chemicals taking into account the

entire life cycle of the chemicals. Such approaches could encompass both regulatory and non-regulatory measures including, inter alia, the promotion of the use of cleaner products and technologies, product labelling, use limitations, and the phasing out or banning of chemicals.

49. In the agricultural area, integrated pest management including the use of biological control agents as alternatives to toxic pesticides, is one way of risk reduction.

50. Other areas of risk reduction encompass the prevention of chemical accidents, prevention of poisoning by chemicals and the undertaking of toxico-vigilance and coordination of clean-up and rehabilitation of areas damaged by toxic chemicals. ›

51. The OECD Council has decided that OECD member countries should establish or strengthen national risk reduction programmes. The International Council of Chemical Associations (ICCA) has introduced initiatives regarding Responsible Care and Product Stewardship aimed to reduce chemical risks. UNEP's Awareness and Preparedness for Emergencies at Local Level (APELL) programme is designated to assist decision-makers and technical personnel to improve community awareness of hazardous installations and to prepare response plans. The ILO has published a Code of Practice on the prevention of major industrial accidents and is preparing an international instrument on the prevention of industrial disasters for eventual adoption in 1993.

Objective

52. (Derived from p. 32) ‹ To reduce unacceptable or unreasonable risks to the extent economically feasible, posed by chemicals employing a broad-based approach, involving a wide range of risk reduction options and by taking precautionary measures derived from a broad based life-cycle analysis. ›

Activities

Management-related:

53. Governments should:

a) (Derived from p. 33 a) ‹ Adopt policies based on precautionary and anticipatory principles, as well as on the lifecycle approach, to chemical management, covering manufacturing, trade, use and disposal. ›

b) ** (p. 33 b) ‹ [Adopt policies and legal frameworks and procedures to identify, regulate and minimize the use of hazardous chemicals, by substitution, severely restricting the use, and phasing out of the production and use, as a priority for those chemicals which are on the prohibition lists of international conventions, in particular asbestos materials and organohalogen compounds.] › **

c) ** (p. 33 e, f) ‹ Increase efforts to identify national needs for standard setting and implementation in the context of the FAO/WHO Codex alimentarius in order to minimize adverse effects of chemicals in food.

d) Develop national policies and adopt the necessary regulatory framework for prevention of accidents (land use planning, permit systems, reporting requirements on accidents, etc.) and work with OECD/UNEP international directory of regional response centres and APELL programme. › **

e) Promote the establishment of national poison control centres to ensure prompt and adequate diagnosis and treatment of poisonings.

f) (Derived from p. 33 h) ‹ [Develop programmes including research, to replace toxic chemicals with alternative clean technologies and less hazardous substitutes, and especially such toxic chemicals for which there is reason to believe that their use may need to be restricted or banned, including the ones which are on the prohibition list of international conventions, in particular asbestos material and organohalogen compounds.] ›

g) (Derived from p. 33 k) ‹ Reduce the over-dependence on the use of agricultural chemicals through alternative farming practices, integrated pest management or other appropriate means. ›

h) ** (p. 33 m) ‹ [Require] manufacturers, importers and others using toxic/hazardous chemicals to develop emergency response procedures and preparation of on-site and off-site emergency response plans. › **

i) ** (p. 33 p) ‹ Identify, assess, reduce, and minimize, or eliminate as far as feasible by environmentally sound disposal, risks from storage of outdated chemicals. › **

54. (Derived from p. 34) ‹ Industries should [Develop an internationally agreed upon code of principles for the management of trade in chemicals]. ›

Data and Information:

55. Governments and institutions, with the cooperation of relevant intergovernmental and non-governmental organizations, and appropriate agencies and programmes of the United Nations should:

a) ** (p. 35 c) ‹ Promote exchange of information on national and regional activities to reduce the risks of chemicals. › **

b) (Derived from p. 33 g) ‹ Cooperate in the development of chemical risk communication guidelines at the national level to promote information exchange with the public and the understanding of risks. ›

International and Regional Cooperation and Coordination:

56. International organizations with active participation of Governments and non-governmental organizations should:

a) (Derived from p. 33 j) ‹ Undertake concerted activities to reduce risks of selected chemicals, taking into account the entire life cycle of the chemicals. These activities could encompass both regulatory and non-regulatory measures including the promotion of the use of cleaner products and technologies; emission inventories; product labelling; use limitations; economic incentives; and the phasing out or banning of chemicals. ›

b) ** (p. 33 i) ‹ Collaborate to develop common criteria to determine which chemicals are suitable candidates for concerted risk reduction activities. › **

c) ** (p. 35 d) ‹ Coordinate concerted risk reduction activities. › **

d) ** (p. 33 l) ‹ Develop policies for manufacturers, importers and others using toxic/hazardous chemicals to disclose toxicity information declaring risks and emergency response arrangements; › **

e) ** (p. 33 n) ‹ Encourage large industrial enterprises including transnational corporations and other enterprises to introduce policies and commitment to adopt equivalent or not less stringent standards of operation, as in the country of origin. › **

f) Encourage and support small and medium size industry to develop and adopt relevant procedures for risk reduction in their activities.

g) ** (p. 33 o) ‹ [Prohibit the exporting of chemical products, the sale of which is banned in the state of origin.] › **

h) ** (p. 33 d) ‹ Encourage national and regional work to harmonize evaluation of pesticides. › **

i) (Derived from p. 35 e) ‹ [Promote and develop legal instruments and mechanisms to phase out the production and use of asbestos materials, formulating programmes to substitute for them with safer alternatives]. ›

j) ** (p. 35 a) ‹ Formalize networks of emergency response centres. › **

Means of implementation

Financial and Cost Evaluation:

57. Risk assessment is a prerequisite for many actions needed to meet the objectives of this programme area. These costs are included in estimates for programme areas A and E and part of the costs of national-level programmes are

included under programme area E. About US$ 4 million will be needed annually from international community for training and strengthening the emergency and poison control centres. 5/

Scientific and Technological Means:

58. Governments in cooperation with relevant international organizations and programmes should:

a) ** (p. 35 b) ‹ Promote technology that would minimize the use of hazardous chemicals and processes in all countries. › **

b) (Derived from p. 33 c) ‹ Carry out national reviews of earlier accepted pesticides and reviews of the possible substitution of other pest-control methods, particularly for pesticides which are toxic and/or persistent and/or bio-accumulative. ›

Capacity Building:

59. Strengthen national capabilities and capacities for management of chemicals, including risk reduction, as proposed under Programme area E.

E. STRENGTHENING OF NATIONAL CAPABILITIES AND CAPACITIES FOR MANAGEMENT OF CHEMICALS

Basis for Action

60. ** (p. 36-38) ‹ Many countries lack national systems to cope with chemical risks. In several countries with systems in place there is an urgent need to make the systems more efficient.

61. Basic elements for national sound management of chemicals are: (i) adequate legislation; (ii) information gathering and dissemination; (iii) capacity for risk assessment and interpretation; (iv) establishment of risk management policy; (v) capacity for implementation and enforcement; (vi) capacity for rehabilitation of contaminated sites and poisoned persons.

62. As management of chemicals takes place within a number of sectors, related to various national ministries, experience suggests that an interministerial coordinating mechanism is essential. › **

Objective

63. ** (p. 39) ‹ National systems for environmentally sound management of chemicals including legislation and provisions for implementation and enforcement should be in place in all countries to the extent possible by the year [2000]. › **

Activities

Management-related:

64. Governments, with the collaboration of appropriate intergovernmental organizations, and agencies and programmes of the United Nations should:

a) Promote and support multi-disciplinary approaches to chemical safety problems;

b) ** (p. 41 a) ‹ [Establish an interministerial coordinating mechanism, presided over by a senior member of the Government, to provide liaison between all parties involved in chemical safety activities (e.g. agriculture, education, industry, labour, health, transportation, police, civil defense, economic affairs, research institutions, poison control centres).] › **

c) ** (p. 41 b) ‹ Develop institutional mechanisms for the management of chemicals. › ** including effective means of enforcement;

d) ** (WG.II/L.19/Rev.1, p. 9 h) ‹ [Governments according to their possibilities and with the help of multilateral cooperation should encourage industry to dispose of any such banned or severely restricted chemicals that are still in stock [or in use]/[but not in use], as soon as possible, in an environmentally sound manner.] › **

e) ** (p. 41 e) ‹ [Develop networks of emergency response centres, including poison control centres]. › **

f) ** (p. 41 f) ‹ Develop national and local capabilities to response to accidents by full implementation of the APELL and similar programmes and regularly tested and updated emergency plans consistent with the OECD guiding principles on accident prevention, preparedness and response, where appropriate. › **

g) ** (p. 41 h) ‹ In cooperation with industry develop emergency response procedures, identifying necessary means and equipment in industries and plants to reduce impacts of accidents. › ** (Ref. also Agenda 21 chapter on "Business and Industry")

h) (Derived from p. 41 i) ‹ [Adopt legislation to prevent illegal import and export of toxic and dangerous products to strengthen institutional capacities for this purpose.]/[Employ measures, primarily in the area of enforcement, to prevent the illegal import and export of toxic and dangerous products and strengthen institutional capacities for this purpose.] ›

Data and Information:

65. Governments should:

a) (Derived from p. 41 b and 40 k) ‹ Direct information campaigns to the general public to increase the awareness of problems on chemical

safety including programmes providing information about chemical stockpiles, environmentally safer alternatives and emission inventories which could also be a tool for risk reduction. ›
(Ref. also Agenda 21 chapter on "Promotion of Education, Training and Public Awareness")

b) (Derived from p. 41 c) ‹ In conjunction with IRPTC, establish national registers and databases, including safety information, for chemicals. ›

International and Regional Cooperation and Coordination:

66. International organizations should:

a) ** (p. 40 a-c) ‹ Prepare guidelines with advice and check lists for enacting legislation in the chemical safety field.

b) [Support countries, particularly developing countries, to develop and further strengthen national legislation and its implementation.]

c) [Build on past, present and future risk assessment works at international level, to support countries, particularly developing countries to develop and strengthen risk assessment capabilities at national and regional levels to minimize and when appropriate prevent risk in the manufacturing and the use of toxic and hazardous chemicals.] › **

d) (Derived from p. 40 d) ‹ Promote full implementation of UNEP's APELL programme and in particular the use of an OECD/UNEP international directory of emergency response centres. ›

e) ** (p. 40 f) ‹ Cooperate with developing countries in the setting up of an institutional mechanism at the national level and the development of appropriate tools for management of chemicals. › **

f) (Derived from p. 40 g) ‹ Arrange at all levels of production and use information courses aimed at staff working on chemical safety issues. ›

g) ** (p. 40 h) ‹ Develop mechanisms to make maximum use in countries of internationally available information. › **

h) (Derived from p. 40 j) ‹ Invite UNEP to develop, and implement guiding principles for accident prevention, preparedness and response for Governments, industry and the public, building on the ILO, OECD and ECE work in this area. ›

i) (Derived from p. 40 l) ‹ Cooperate with developing countries in strengthening their institutional and regulatory capacities in order to prevent illegal import and export of toxic and dangerous products. ›

Means of Implementation

Financing and Cost Evaluations:

67. National annual costs for regulatory efforts, including enforcement, have been estimated as a proportion of the value of chemicals manufactured or imported. On this basis the annual requirements in developing countries would amount to US$ 500-600 million. It is suggested that US$ 100-150 million be provided as concessional finance for this purpose to developing countries by the international community. 6/

Scientific and Technological Means:

68. International organizations should:

a) Promote the establishment and strengthening of national laboratories to ensure the availability of adequate national control in all countries regarding the importation, manufacture and use of chemicals.

b) ** (p. 40 i) ‹ Promote translation where feasible of internationally prepared documents on chemical safety into local languages and support various levels of regional activities related to technology [transfer] and information exchange. › **

Human Resource Development:

69. International organizations should:

a) (Derived from p. 40 e) ‹ Enhance technical training for developing countries in relation to risk management of chemicals. ›

b) Promote and increase support for research activities at the local level by providing grants and fellowships for studies at recognized research institutions active in disciplines of importance for chemical safety programmes.

70. Governments should:

** (p. 41 g) ‹ Organize, in collaboration with industry and trade unions, training programmes in management of chemicals, including emergency response, targeted at all levels. › ** In all countries basic elements of chemical safety principles should be included in the primary education curricula.

Explanatory notes:

1/ The words ".... and wastes" have been left out from the end of this sub-heading, since it is now treated separately under the chapter on "Environmentally sound management of hazardous wastes".

The same applies to paragraphs 64 h and 66 i where the reference to "toxic and dangerous wastes" has been left out in this document.

A progress report to be prepared by UNEP on "Prevention of illegal international traffic in toxic and dangerous products and wastes" will be included in an Addendum to this document.

2/ Throughout this document the term "Governments" also refers to the European Community acting in the sphere of its competence.

3/ The costs to Governments in providing background documents and draft assessment statements are included in costing for programme E under strengthening of national regulatory efforts.

4/ The international costs of US$ 10 million annually include costs for worldwide training programmes and workshops to increase the national capacities to enable interpretation and handling of data, including use of computerized systems. It also includes the elaboration of a legally binding instrument related to the exchange of information on toxic chemicals as well as the strengthening of international institutions. Other costs related to information exchange on toxic chemicals and chemical risks at national level are included in costing under Programme E.

5/ The international costs of US$ 4 million annually include costs for training of trainers for emergency response centres as well as professional staff of emergency and poison control centres. The costs of infrastructure support for both types of centres are also included.

6/ National costs for regulatory efforts, including harmonization of classification and labelling of chemicals and information exchange on toxic chemicals and chemical risks have been estimated proportionally to the value of chemicals manufactured or imported.

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PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS: CROSS-SECTORAL ISSUES

ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS WASTES (Including prevention of illegal international traffic in toxic and dangerous wastes) 1/

(Section II, Chapter 12 of Agenda 21)

Report of the Secretary-General of the Conference

INTRODUCTION

1. This document has been prepared by the Secretary-General of the Conference in response to decision 3/23 of the Preparatory Committee taken at its third session as set out in document A/CONF.151/PC/WG.II/L.21/Rev.1. It is based on guidance provided by the Preparatory Committee on the structure of Agenda 21, as contained in A/CONF.151/PC/L 49*. All texts taken verbatim from PrepCom III document A/CONF.151/PC/WG.II/L.19/Rev.1, are inserted between double asterisks (** < > **) with reference to the specific relevant paragraph number. When the text has been modified, the double asterisks have been left out and the words "Derived from" are inserted before the reference to paragraph numbers.

2. Effective control of hazardous wastes generation, storage, treatment, transport, recovery and disposal is of paramount importance for proper health, environmental protection and natural resource management and sustainable development.

3. The problem of hazardous waste management involves both the waste generated today and the uncontrolled disposal of years ago. Prevention pays, but it requires knowledge, experienced people, facilities, money, technical and scientific capacities.

4. The need for the development of an international strategy for the environmentally sound management of hazardous waste was, therefore, stressed at the first meeting of UNCED Preparatory Committee giving priority to waste reduction at the source and aiming, inter alia, at self sufficiency and taking into account the needs of the developing countries. Increased cooperation should be encouraged between relevant United Nations agencies, such as UNEP, FAO, WHO and UNIDO. An ad hoc meeting of government designated experts now called in December 1991 by the Executive Director of UNEP will discuss draft elements of an international strategy and an action programme, including technical guidelines for environmentally sound management of hazardous wastes (The recommendation from this meeting will be summarized in an Addendum to this document).

5. The activities outlined in this document are very closely related to, and have implications for, many of the programme areas described in other chapters, so an overall integrated approach to hazardous waste management is therefore necessary.

Overall objective

6. ** (p. 1) ‹ Within the framework of integrated life cycle management prevent to the extent possible and minimize the generation of hazardous wastes, as well as treat the wastes in ways that they do not cause harm to the environment. › **

Overall targets

7. The overall targets are as follows:

a. (Derived from p. 1 a) ‹ Prevention or minimization of the generation of hazardous wastes, as part of an overall integrated cleaner production approach, elimination or reduction of the transboundary movements of hazardous wastes to a minimum consistent with the environmentally sound and efficient management of those wastes, and self-sufficiency in waste disposal in the country of origin to the extent environmentally sound and efficient. ›

b. ** (p. 1 b-d) ‹ Ratification of the Basel Convention and the expeditious elaboration of related protocols, [especially] the Protocol on liability and compensation, mechanisms and guidelines to facilitate the implementation of the Convention.

c. Ratification and full implementation by the countries concerned of the Bamako Convention and the expeditious elaboration of a protocol on liability and compensation.

d. [Full respect of the aims of the Bamako Convention by all countries.] > **

8. The following major programmes were proposed and discussed at the third session of the Preparatory Committee as options:

a. ** (p. 2) < Promote waste prevention and minimization through "cleaner production" methods, avoiding the use of hazardous substances where substitutes are available, through resource recovery, recycling, reclamation, direct re-use or alternative uses of wastes.

b. Enhance knowledge and information on the economics of prevention and management of hazardous wastes.

c. Increase knowledge about health and environmental impacts of hazardous wastes.

d. Promote and strengthen institutional capacities in prevention, minimization and management of hazardous wastes.

e. Promote and strengthen international cooperation in management of transboundary movements of hazardous wastes, including control and monitoring, consistent with international and regional legal instruments. > **

9. In order to present a more coherent programme and eliminate duplication of activities, the programme areas in paragraphs (b) and (c) above, were merged with programme areas (a) and (d) respectively, after the consultations with experts in the UNCED Working Party on Hazardous Wastes. In so doing, all efforts have been made to reflect wherever possible, and as agreed during PrepCom III, the full texts from programme areas (b) and (c) under the other two programmes as previously mentioned. The revised programme titles now read as follows:

a. Promote waste prevention and minimization through "cleaner production" methods, including, in particular, the avoidance of the use of hazardous substances where substitutes are available, and resource recovery, recycling, reclamation, direct reuse or alternative uses of wastes;

b. Promote and strengthen institutional capacities in hazardous waste management including improving knowledge about health and environmental impacts of hazardous wastes;

c. Promote and strengthen international cooperation in management of transboundary movements of hazardous wastes, including control and monitoring, consistent with international and regional legal instruments.

PROGRAMME AREAS

A. PROMOTE WASTE PREVENTION AND MINIMIZATION THROUGH "CLEANER PRODUCTION" METHODS, INCLUDING, IN PARTICULAR, THE AVOIDANCE OF THE USE OF HAZARDOUS SUBSTANCES WHERE SUBSTITUTES ARE AVAILABLE, AND RESOURCE RECOVERY, RECYCLING, RECLAMATION, DIRECT REUSE OR ALTERNATIVE USES OF WASTES

Basis for action

10. (Derived from p. 3 and p. 12) ‹ Human health and environmental quality are being continually degraded by the increasing amount of waste being produced. There are increasing direct and indirect costs to the society and to individual citizens in connection with its generation, handling and disposal. It is, therefore, crucial to enhance the knowledge and information on economics of prevention and management of hazardous wastes, including impact on employment and environmental benefits, in order to ensure that necessary capital investment be made available in development programmes through economic incentives. One of the first priorities in waste management is minimization, as part of a broader approach to change industrial processes and consumer patterns, through pollution prevention and cleaner production strategies. ›

11. ** (p. 4) ‹ Among the most important factors in these strategies is the recovery of wastes into useful material. Technology application, modification and development of new low waste technologies is therefore currently a central focus of waste minimization. › **

Objectives

12. (Derived from p. 5) ‹ The objectives of this programme are to:

a. Reduce the generation of hazardous wastes, to the extent feasible, as part of an integrated cleaner production approach; and,

b. Optimize the use of raw materials by utilizing, where practicable and environmentally sound, the residues from production processes. ›

c. ** (ref. title of original programme area B) ‹ Enhance knowledge and information on the economics of prevention and management of hazardous wastes. › **

13. (Derived from p. 6, chapeau) ‹ To achieve the objectives, and thereby reduce the impact and cost of industrial development, countries which can afford to adopt the requisite technologies without detriment to their development should establish policies including: ›

a. ** (p. 6 a-f) ‹ Integration of cleaner production approaches and waste minimization in all planning, and adoption of specific targets by a target year;

b. Promote the use of regulatory and market mechanisms;

c. Establish an intermediate target for the stabilization of the quantity of hazardous waste generated;

d. Establish longer terms targets for reducing the amount of hazardous waste produced per unit of manufacture;

e. [Establish targets for countries producing banned or severely restricted chemicals (which are potentially hazardous wastes) to phase out such products and intensify research and development for alternatives];

f. Achieving, on a substance by substance basis, a qualitative improvement of waste streams, mainly through activities aimed to reduce hazardous substances in waste streams. › **

g. ** (p. 13) ‹ Facilitate the establishment of cost effective policies and approaches to hazardous waste prevention and management, taking into consideration the state of development of each country. › **

Activities

Management related: 2/

14. The following activities should be undertaken:

a. (Derived from p. 9 a) ‹ Governments (Throughout this document the term "Governments" also refers to the European Community acting in the sphere of its competence) should modify existing standards or specifications for purchases to encourage energy and raw materials savings and to avoid discrimination against recycled materials. ›

b. (Derived from p. 9 b) ‹ Governments, according to their possibilities and with the help of multilateral cooperation, should provide economic or regulatory incentives to stimulate industrial innovation towards cleaner production methods, encouraging industry to invest in preventive and/or recycling technologies so as to ensure equal standards of environmental management to apply to recyclable wastes as well as to other types of wastes, and to encourage waste minimization investments. ›

c. (Derived from p. 9 c and d) ‹ [Developed country Governments should provide a range of incentives to encourage industry to transfer environmentally sound technologies and know-how on clean technologies and low waste production to developing countries on preferential and non-commercial terms, which will bring about changes to sustain innovation. Governments should cooperate with industry to develop guidelines and codes of conduct, leading to cleaner production through sectoral trade industry associations.]

d. Governments, should encourage, industry to treat and dispose of wastes at source, or as close as possible to the source of generation, wherever waste generation is unavoidable. ›

e. ** (p. 9 g) ‹ Governments should encourage technology assessments e.g. through the use of technology assessment centres. › **

f. Governments should promote cleaner production through the establishment of centres providing training and information on environmentally sound technologies.

g. Industry should establish environmental management systems, including environmental auditing of its production or distribution sites, in order to identify where installing cleaner production methods is needed.

h. (Derived from p. 15 chapeau and (a)) ‹ A relevant and competent international organization should take the lead, in cooperation with other organizations, to develop guidelines for estimating the costs and benefits of various approaches to the adoption of cleaner production and waste minimization, and environmentally sound management of wastes. ›

Data and information:

15. The following activities should be undertaken:

a. (Derived from p. 7 a) ‹ Governments, assisted by international organizations, should establish mechanisms for assessing the value of existing information systems. ›

b. (Derived from p. 7 b) ‹ Governments should establish nationwide and regional information collection and dissemination clearing houses and networks, which are easy to access and use by Government institutions and industry. ›

c. (Derived from p. 7 c) ‹ International organizations, through the UNEP Cleaner Production Programme and the ICPIC system, should extend and strengthen existing systems for collection of cleaner production information. ›

d. ** (p. 7 d) ‹ Promote the use and dissemination by all United Nations agencies of information collected through the Cleaner Production network. › **

e. (Derived from p. 15 chapeau and (b)) ‹ OECD should, in cooperation with other organizations, undertake a comprehensive survey of and disseminate information on experiences of member countries in adopting economic regulatory schemes and incentive mechanisms for waste management and for the use of clean technologies, which prevent wastes from being generated. ›

International and regional cooperation and coordination:

16. International and regional cooperation is required for the ratification and implementation of the Basel and Bamako Conventions. Regional cooperation will be necessary for the development of similar conventions in regions other than Africa, if so required. Other activities proposed are:

a. ** (p. 7 e-f) ‹ [Strengthen international cooperation in monitoring the transfer to other countries of industries generating toxic and hazardous wastes].

b. Cooperate in monitoring the effects of the management of hazardous wastes. › **

Means of implementation

Financing and cost evaluation:

17. It is estimated that the annual cost to improve national capacity of developing countries through contributions from the international community and industry to implement this programme area, will be approximately US$ 740 million. 3/ This includes inter alia, establishment of national centres to promote cleaner production activities, research and training activities and activities related to use of economic instruments in waste management amounting to about US$ 380 million per year and launching of demonstration projects for about US$ 360 million per year. This amount may depend on the rate of implementation of such projects at the country level, for which participation of the industry should be an integral part.

18. The annual cost for strengthening international institutions, including their activities on strengthening of information exchange systems, enhancement of knowledge and information on economics of prevention and management of hazardous wastes will be about US$ 10 million.

Technology development and research:

19. The following activities should be undertaken:

a. (Derived from p. 8) ‹ Governments, according to their possibilities and with the help of multilateral cooperation, academia and industry, should significantly increase financial support for "cleaner technology R&D programmes", including the use of biotechnologies.

b. Industry, with assistance from National Governments and international organizations, should promote research into the phase-out of hazardous processes and the reduction of raw materials and energy consumption.

c. Industry should develop schemes to integrate the cleaner production approach into the design of products and their management practices. ›

Human Resources Development:

20. The following activities should be undertaken:

a. (Derived from p. 10 a, b, c) ‹ Governments, international organizations and industry should increase support for industrial training programmes, incorporating waste prevention and minimization techniques and launching demonstration projects at the local level to develop 'success stories' in cleaner production.

b. Industry should integrate cleaner production principles and case examples into training programmes and establish demonstration projects/networks by sector/country.

c. All sectors of society should develop cleaner production awareness campaigns and promote dialogue and partnership with industry and other actors. ›

Capacity Building:

21. The following activities should be undertaken:

a. ** (p. 11 a) ‹ Governments in developing countries in cooperation with industry and with the cooperation of appropriate international organizations, should develop inventories of hazardous waste production, in order to identify their needs of technology transfer and implementation for sound management of wastes and its disposal. › **

b. (Derived from p. 11 b-f) ‹ Governments should include into national planning and legislation an integrated approach to environmental protection, driven by prevention and source reduction criteria, based on the polluter pays principle, [and adopt waste reduction targets].

c. Governments should work with industry on sector by sector cleaner production and waste minimization campaigns, including quantified targets for raw material and energy use, as well as the reduction of wastes and other emissions.

d. Governments should take the lead to strengthen national environmental impact assessment procedures to take into account the concept of the "cradle to grave" approach for the management of hazardous wastes, to identify options for minimizing the generation of hazardous wastes, through safer handling, storage, disposal and destruction.

e. Governments in collaboration with industry and appropriate international organizations should develop procedures for the monitoring of the application of the "cradle to grave" approach, including environmental audits.

f. [Bilateral and multilateral development assistance agencies should substantially increase funding for cleaner technology transfer to developing countries and economies in transition, including small and medium sized enterprises.] ›

B. PROMOTE AND STRENGTHEN INSTITUTIONAL CAPACITIES IN HAZARDOUS WASTE MANAGEMENT INCLUDING IMPROVING KNOWLEDGE ABOUT HEALTH AND ENVIRONMENTAL IMPACTS OF HAZARDOUS WASTES

Basis for action

22. (Derived from p. 16 and p. 22) ‹ Many countries lack the national capacity to handle and manage hazardous wastes. This is primarily due to inadequate infrastructure, deficiencies in regulatory frameworks, insufficient training and education programmes and lack of coordination between the different ministries and institutions involved in various aspects of waste management. In addition, there is a lack of knowledge on environmental contamination and pollution and the associated health risk from exposures of populations, especially women and children and ecosystems to hazardous wastes, the assessment of risks and the characteristics of wastes. Steps need to be taken immediately to identify populations of high risks and to take remedial measures, where necessary. To ensure environmentally sound management of hazardous wastes, one of the main priorities is to provide awareness, education and training programmes to cover all levels of society. There is also a need to undertake research programmes to understand the nature of hazardous materials, to identify their potential environmental effects and to develop technologies to safely handle these wastes. Finally, there is a need to strengthen the capacities of institutions which are responsible for the management of hazardous wastes. ›

Objectives

23. The objectives are as follows:

a. ** (p. 23, 24, 25) ‹ Adoption of appropriate coordinating, legislative and regulatory measures at the national level supporting the environmentally sound management of hazardous wastes including for the implementation of international conventions.

b. Public awareness and information programmes on hazardous waste issues and basic education and training programmes provided for industry and government workers in all countries.

c. Comprehensive research programmes on hazardous materials to be established in countries. › **

d. (Derived from p. 26) ‹ Service industries should be strengthened to handle hazardous materials; international networking should also be built up. ›

e. ** (p. 27) ‹ Endogenous capacities to be established in all developing countries to train and educate staff at all levels in hazardous waste handling, monitoring and environmentally sound management. › **

f. Promote human exposure assessment with respect to hazardous wastes sites and identify remedial measures required.

g. ** (p. 17 a, b) ‹ Facilitate the assessment of impacts and risks of hazardous wastes on human health and the environment by establishing appropriate procedures, methodologies, criteria and/or effluent guidelines and standards.

h. Improve the knowledge regarding effects of hazardous wastes on health and the environment; and, › **

i. (Derived from p. 17 c) ‹ Make information available to governments and to the general public on the effects of hazardous waste, including infectious waste, on health and the environment. ›

Activities

Management related:

24. The following activities should be undertaken:

a. (Derived from p. 19 a, b) ‹ Governments should establish and maintain inventories including computerized inventories of hazardous wastes and their treatment/disposal sites and assess the exposure and the risk to health and the environment as well as identify measures which are needed to clean up the disposal sites.

b. Governments and international organizations should collaborate in developing easy to implement methods and guidelines for characterization and classification of hazardous wastes. ›

c. Governments should carry out exposure and health assessments of populations residing near to uncontrolled hazardous waste sites and initiate remedial measures.

d. (Derived from p. 18 b) ‹ International organizations should develop improved health-based criteria upon which regulations and standards can be established, taking into account national decision-making processes, and assist in the preparation of practical technical guidelines for prevention, minimization and safe handling and disposal of hazardous wastes. ›

e. Interdisciplinary and intersectoral groups should be established by Governments in developing countries in cooperation with international organizations and agencies, to implement training and research activities related to evaluation, prevention and control of hazardous waste health risks. Such groups should serve as models to develop similar regional programmes.

f. ** (p. 9 e-f) ‹ Governments, according to their possibilities and with the help of multilateral cooperation, should encourage as far as possible combined treatment/disposal facilities for small and medium size industries.

g. Governments should promote identification and clean-up of sites of hazardous wastes in collaboration with industry and international organizations. Technologies, expertise and financing should be available for this purpose, as far as possible with the application of the polluter pays principle. › **

Data and Information:

25. The following activities should be undertaken:

a. (Derived from p. 20) ‹ Governments and international and regional organizations, should facilitate and expand the dissemination of technical and scientific information dealing with the various health aspects of hazardous waste, and promote its application. ›

b. Governments should establish notification systems and registries of exposed populations and adverse health effects and of databases on risk assessments of hazardous wastes.

International and Regional Cooperation and Coordination: 4/

26. Governments with the cooperation of international agencies should support the establishment and operation of a network of academic institutions to collaborate on hazardous waste health assessments as well as on related training and educational programmes at regional or local level.

Means of Implementation

Financing and cost evaluation:

27. Total costs for management and safe disposal of hazardous wastes for OECD countries are roughly estimated to be about US$ 12 billion, for Eastern Europe US$ 3 billion and for developing countries US$ 3,5 billion per year. 5/ An amount of US$ 500 million per year should be made available through the international community to developing countries 6/ for the strengthening of their institutional capacities to safely manage and dispose of their hazardous wastes.

Scientific and technological means:

28. The following activities should be undertaken:

a. (Derived from p. 28) ‹ International organizations [and donors] should increase support for hazardous waste research management in developing countries.

b. Governments, in collaboration with international organizations, should conduct research on the health effects of hazardous wastes in developing country conditions, including the long term effects on children and women.

c. Governments should conduct research aimed at the needs of small and medium sized industries.

d. Industry, governments and international organizations should expand technological research on hazardous wastes handling, storage, transport, treatment and disposal and hazardous wastes assessment and management. ›

e. (Derived from p. 18 a) ‹ International organizations should identify relevant and improved technologies for handling, storage, treatment and disposal of hazardous wastes. ›

Human Resources Development:

29. Governments, international organizations and industry should:

a. ** (p. 30) ‹ Increase public awareness and information on hazardous waste issues and promote the development and dissemination of public information on hazardous wastes that is understandable to the general public.

b. Increase participation in hazardous wastes management projects of the general public, particularly women, including grass root levels.

c. Develop training and education programmes for men and women in industry and government aimed at specific real-life problems, for example, planning and implementing waste minimization programmes, conducting hazardous materials audits or establishing appropriate regulatory programmes.

d. Promote the transfer to developing countries of technologies on hazardous waste minimizing and handling, through training for labour, industrial management, and government regulatory staff. › **

30. The following activities should be undertaken:

a. (Derived from p. 21 a-d) ‹ Governments and international organizations should collaborate in developing and disseminating educational materials concerning waste and their effects on environment and health, for use in schools, by women's groups and by the general public.

b. Governments should establish or strengthen programmes for environmentally sound management of hazardous wastes in accordance with health and environmental standards and extend surveillance systems to identify adverse effects on populations and the environment of exposure to hazardous wastes;

c. International organizations should provide assistance to Member States for assessing the health and environmental risks, resulting from exposure to hazardous wastes and in identifying their priorities for controlling the various categories or classes of wastes;

d. Governments should promote centres of excellence for training in waste management, building on appropriate national institutions and encouraging international cooperation including through institutional links between developed and developing countries. ›

Capacity Building:

31. ** (p. 29 a) ‹ Multinational companies (MNC) and other large scale enterprises should introduce policies and commitment to adopt equivalent or not less stringent standards of operation with reference to wastes generation and disposal, while governments are invited to make efforts to establish regulations, which require such standards. › **

32. (Derived from p. 29 b: chapeau) ‹ Governments, international organizations and industries should: ›

a. ** (p. 29 b (i)-(v)) ‹ Support national institutions for dealing with hazardous wastes from the regulatory monitoring and enforcement perspectives, including enabling them to implement international conventions.

b. Develop industry-based institutions for dealing with hazardous wastes and service industries for handling hazardous wastes.

c. Adopt technical guidelines for the environmentally sound management of hazardous wastes and support implementation of regional and international conventions.

d. Develop and expand international networking, between professionals working in the hazardous wastes area, and maintain an information flow among countries.

e. Assess the feasibility of establishing and operating national, sub-regional and regional hazardous wastes treatment centres. Such centres could also be used for education and training as well as to facilitate and promote the transfer of technologies for the environmentally sound management of hazardous wastes. › **

f. Identify and strengthen relevant academic/research institutions or centres for excellence to enable them to carry out education and training activities in the environmentally sound management of hazardous wastes.

g. ** (p. 29 p. (vi)-(viii)) ‹ Develop a programme for the establishment of national capacities to train and educate staff at various levels in hazardous wastes management.

h. Study the feasibility [in the context of the Basel Convention and of relevant regional conventions] of providing financial assistance on an interim basis, in case of an emergency situation, in minimizing damage from accidents arising from transboundary movements of hazardous wastes or during the disposal of these wastes.

i. Conduct environmental audits of existing industries to improve in plant hazardous wastes management regimes. › **

C. PROMOTE AND STRENGTHEN INTERNATIONAL COOPERATION IN MANAGEMENT OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES, INCLUDING CONTROL AND MONITORING, CONSISTENT WITH INTERNATIONAL AND REGIONAL LEGAL INSTRUMENTS

Basis for action

33. (Derived from p. 31) ‹ In order to promote and strengthen international cooperation in the management, including control and monitoring of transboundary movements of hazardous wastes, there is a need to harmonize the procedures and criteria used in various international and legal instruments. There is also a need to develop or harmonize existing criteria to identify hazardous wastes dangerous to the environment, and build monitoring capacities. ›

Objectives

34. The objectives are as follows:

a. (Derived from p. 32 a) ‹ Facilitate and strengthen international cooperation in the environmentally sound management of hazardous wastes, including control and monitoring of transboundary movements of hazardous wastes, including wastes for recovery by having internationally adopted criteria for identification and classification of hazardous wastes, for the harmonization of relevant international legal instruments. ›

b. ** (p. 32 b) ‹ [Adopt a ban on]/[prohibit/not permit] the export of hazardous wastes to countries, that do not have the capacity to deal with those wastes in an environmentally sound way. › **

Activities

Management related:

(Derived from p. 33 chapeau) ‹ Strengthening and harmonization of criteria and regulations

35. Governments and international organizations should cooperate as appropriate to: ›

a. ** (p. 33 a) ‹ Incorporate the notification procedure called for in the Basel Convention and other relevant regional conventions, as well as their annexes, into national legislation. › **

b. (Derived from p. 33 b) ‹ Formulate [international and where appropriate] regional agreements such as the Bamako Convention regulating the transboundary movement of hazardous wastes. ›

c. ** (p. 33 c, d) ‹ [Help promote the complementarity of such regional agreements with international conventions and protocols.]

d. Strengthen national and regional capacities and capabilities to monitor and control the transboundary movement of hazardous wastes. › **

e. (Derived from p. 33 e) ‹ Set up, at national and regional levels, systems for monitoring and surveillance of the transboundary movements of hazardous wastes. ›

f. ** (p. 33 f, g) ‹ Develop guidelines for the identification of hazardous wastes at the national level, taking into account internationally, including regionally agreed criteria and prepare a list of hazard profiles for the hazardous wastes listed in the national legislation.

g. Develop and use appropriate methods for testing, characterizing and classifying hazardous wastes and adopt or adapt safety standards and principles for managing hazardous wastes in an environmentally sound way. › **

** (p. 35) ‹ Implementation of existing agreements

36. Governments are urged to ratify the Basel and Bamako Conventions and to pursue the expeditious elaboration of protocols on liability and compensation and of mechanisms and guidelines to facilitate the implementation of the conventions. › **

Data and information:

** (p. 36) ‹ Promotion of information and public awareness

37. [To promote and assist intergovernmental and non-governmental organizations in establishing and enhancing information networks on transboundary toxic and hazardous wastes trade and illegal traffic.] › **

International and regional cooperation and coordination:

38. International organizations should:

(Derived from document A/CONF.151/PC/WG.II/L.19/Add.3/Rev.1, p.40 1) ‹ Cooperate with developing countries in strengthening their institutional and regulatory capacities, in order to prevent illegal transboundary movement of hazardous wastes. ›

Means of implementation

Financing and cost evaluation:

39. In view of the fact that this programme area covers a relatively new field of operation and in the absence of adequate studies having been undertaken so far on costing of activities under this programme, no cost estimate is available at present. However, costs for some of the activities presented under this programme which are related to capacity building, could be considered covered under the costing of programme area B.

The Interim Secretariat for the Basel Convention should undertake studies in order to arrive at a reasonable cost estimate for activities to be undertaken initially until the year 2000.

Scientific and technological means and human resource development:

40. Activities under these headings are dealt with under programme area B.

Capacity Building:

(Derived from p. 34 chapeau) ‹ Adoption of normative measures

41. Governments and international organizations should collaborate to: ›

a. ** (p. 34 a) ‹ Elaborate or adapt policies for the environmentally sound management of hazardous wastes [in conformity with]/[keeping in mind provisions of] existing international instruments. › **

b. (Derived from p. 34 b-d) ‹ To make recommendations to the appropriate fora or to set up or adapt norms, including the equitable implementation of the polluter pays principle, and regulatory measures to comply with the obligations and principles of the Basel Convention, the Bamako Convention and other future regional and international agreements including protocols, as appropriate, for setting out appropriate rules and procedures in the field of liability and compensation for damage, resulting from the transboundary movement and disposal of hazardous wastes and other wastes, [as well as mandatory insurance to cover this.]

c. [Promote voluntary as well as mandatory prohibition of exports of hazardous wastes to developing countries, and to countries that cannot treat and dispose of the wastes to the same stringent requirements as in the country of origin].

d. [Urge governments to introduce legislation to severely punish persons engaged in illegal waste trade and illegal traffic.] ›

e. (Derived from document A/CONF.151/PC/WG.II/L.19/Add.3/Rev., p. 41 i) ‹ [Adopt legislation to prevent illegal transboundary movements of hazardous wastes and to strengthen institutional capacities for this purpose] / [Employ measures, primarily in the area of enforcement, to prevent illegal transboundary movements of hazardous wastes and strengthen institutional capacities for this purpose.] ›

42. Strengthening of institutional capacities for activities related to this programme area are also included in programme area B.

EXPLANATORY NOTES:

1/ The words ".... toxic and dangerous products..." have been left out from this sub-heading, since it is now treated separately under the chapter on "Environmentally sound management of toxic chemicals".

The same applies to paragraphs 38 and 41 e where there is only reference to "... hazardous wastes" and not to toxic and dangerous products.

2/ The activity described in p. 9 (h) in document L.19/Rev.1 concerns toxic chemicals and has therefore been transferred to Programme E in the chapter on "Environmentally Sound Management of Toxic Chemicals".

3/ This figure is calculated on the assumption that activities will take place mainly in those countries with a significant industrialization process (about 60 countries). The demonstration projects referred to in the text, are also relevant to activities contained in several other chapters of Agenda 21 such as, for example, the chapters on "Transfer of Technology", "Protection of the Atmosphere" and "Protection of Human Health Conditions".

4/ Activities relevant to International and Regional Cooperation and Coordination are also included in Programme area "C".

5/ These figures are based on an average cost of US$ 500/ton for safe management and disposal of hazardous wastes, which according to OECD estimations range between US$ 20-3000 per ton, depending on the nature of the waste.

6/ This figure has been calculated on the basis of 15 per cent of the total costs to manage and safely dispose of the hazardous wastes.

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PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS: CROSS-SECTORAL ISSUES

ENVIRONMENTALLY SOUND MANAGEMENT OF SOLID WASTES AND SEWAGE-RELATED ISSUES[1]

Report of the Secretary General of the Conference

(Section II, Chapter 13 of Agenda 21)

INTRODUCTION

1. This document has been prepared by the Secretary-General of the Conference in response to the decision 3/23 of the Preparatory Committee taken on 4 September 1991, at its third session, as set out in document A/CONF.151/PC/WG.II/L.21/Rev.1. It is based on the guidance provided by the Preparatory Committee on the structure of Agenda 21, as contained in A/CONF.151/PC/L.49*. All text taken from PrepCom III L documents are to be found inserted between double asterisks (** < > **) with the reference to the specific A/CONF.151/PC/WG.II/L.19/Add.1/Rev.1 relevant paragraph number. When the text has been editorially modified, the double asterisks have been left out and the words "Derived from" have been inserted before the reference to paragraph numbers.

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2. The incorporation of the chapter on environmentally sound management of solid wastes within Agenda 21 is in response to operative paragraphs 3 and 12 of United Nations General Assembly resolution 44/228 which affirm that the Conference should elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of strengthening national and international efforts to promote, inter alia, environmentally sound management of wastes as a means of achieving sustainable and environmentally sound development of all countries.

3. Programme areas included under the present section and chapter of Agenda 21 are closely related to the following programme areas of other sections of Agenda 21:

a. Protection of the Quality and Supply of Fresh Water Resources (Section II, Chapter 10)

b. Promoting a Sustainable Pattern of Human Settlements (Section I, Chapter 7)

c. Protection of Human Health Conditions (Section I, Chapter 6)

d. Changing Consumption Patterns (Section 1, Chapter 4)

4. Solid wastes, as defined in this chapter, include domestic refuse, commercial and institutional wastes, street sweepings and construction debris. In some countries the solid wastes management system also handles human wastes such as nightsoil, septic tank sludge or sludge from sewage treatment plants. While it is possible that these municipal wastes will contain some industrial waste materials and discharges, the report assumes that hazardous wastes and toxic chemicals, which must be kept out of municipal sewers and landfills, will not form part of municipal solid wastes and sewage. Although this is not always a valid assumption it is important to gaining effective control over traditional forms of pollution. Defined thus, this chapter is concerned with the management of municipal solid wastes (MSW).

5. (Derived from p. 1, 2, 5) ‹ Environmentally sound waste management must go beyond the mere safe disposal of wastes that are generated and seek to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption. This implies the application of the integrated life cycle management concept which presents a unique opportunity to reconcile development with environmental protection.

6. Acordingly, the framework for requisite action should be founded on a hierarchy of objectives and focused on the four major waste-related programme areas, as follows:

A. Minimizing wastes

B. Maximizing safe waste reuse[2]

C. Promoting safe waste disposal

D. Extending waste service coverage[3] ›

7. The four programmes are inter-related and mutually supportive and must, therefore, be integrated in order to provide a comprehensive and environmentally-responsive framework for managing municipal solid wastes. The mix and emphasis given to each of the four Programme areas will vary according to the local socio-economic and physical conditions, rates of waste generation and their composition.

PROGRAMME AREAS

A. MINIMIZING WASTES

Basis for action

8. ** (p. 7) ‹ Unsustainable patterns of production and consumption are increasing the quantities and variety of environmentally persistent wastes at unprecedented rates. The trend could double the quantities of wastes produced by the end of the century and increase quantities by between four and five fold by the year 2025. A preventive waste management approach focused on changes in life-styles and in production and consumption patterns offers the best chance for reversing current trends. › **

Objectives

9. (Derived from p. 8, 9) ‹

a. To stabilize or reduce the production of wastes destined for final disposal, over an agreed time frame, through the establishment of national urban and rural production rates based on waste weight, volume and composition.

b. To strengthen procedures for assessing waste quantity and composition changes and for making operational waste minimization policies through enhanced co-operation between countries and international organizations. ›

10. ** (p. 10) ‹ [Some targets of the programme could include:]

a. By [2000], ensure sufficient national, regional and international capacity to access, process and monitor waste trend information and implement waste minimization policies.

b. [By [2000] all industrialized countries should have in place programmes to stabilize per capita waste production of waste, destined for final disposal , at the level prevailing at those dates; developing countries should as well work towards the goal to stabilize their waste production rates, without jeopardizing their development prospects.]

c. [By [2025] produce annual periodic reviews with full global coverage.]

d. [By the year [2000] all countries, in particular industrialized countries, should apply programmes in order to reduce the production of agro-chemical wastes.] › **

Activities

Management-related:

11. Governments[4] and institutions and non-governmental organizations together with consumer groups, in collaboration with appropriate organizations of the United Nations should launch programmes, to achieve sustained action to minimize waste generation. These programmes should, wherever possible, build upon existing or planned activities and should:

a. Develop and strengthen national capacity in making waste minimization operational.

b. Review and reform relevant national policies to provide incentives to reduce unsustainable patterns of production and consumption.

c. Develop national plans to minimize waste generation as part of overall national development plans.

Data and Information:

12. (Derived from p. 11) ‹ Monitoring is a key prerequisite for keeping track of changes in waste quantity and quality and their resultant impact on health and the environment. The following specific activities should be undertaken to support monitoring, national governments, with the support of international agencies, should:

a. Develop and apply methodologies for country-level waste monitoring.

b. Undertake data gathering and analysis, establish national targets and monitor progress.

c. Utilize data to assess environmental soundness of national waste policies as a basis for corrective action.

d. Input information into global information systems. ›

International and Regional Co-operation and Co-ordination:

13. The United Nations and intergovernmental organizations, with the collaboration of governments, should help promote waste minimization by facilitating the greater exchange of information, know-how and experience. The following is a non-exhaustive list of specific activities that could be undertaken:

a. Identify, develop and harmonize methodologies for waste monitoring and transfer such methodologies to countries.

b. (Derived from p. 13 f) ‹ Identify and further develop the activities of existing information networks on clean technologies and waste minimization. ›

c. (Derived from p. 11 c) ‹ Undertake periodic assessment, collate and analyze country data and report systematically to the countries concerned in an appropriate United Nations forum. ›

d. (Derived from p. 12 a) ‹ Review effectiveness of all waste minimization instruments, and identify potential new instruments that could be used and techniques by which they could be made operational at the country level. Guidelines and codes of practice should be developed. ›

e. Undertake research on the social and economic impacts of waste minimization at the consumer level.

Means of Implementation

Financial and Cost Evaluation:

14. It is suggested that industrialized countries invest one per cent of the total annual solid wastes and sewage derived revenues toward waste minimization. At current levels this would amount to about US$ 6.5 billion annually, of which US$ 1.8 billion is required for minimizing municipal solid wastes.

Scientific and Technological Means:

15. (Derived from p. 12 a, b, c, d, e) ‹ For waste minimization technologies and procedures will need to be identified and widely disseminated. This work should be co-ordinated by national governments with the co-operation and collaboration of non-governmental organizations, research institutions and appropriate organizations of the United Nations and include the following:

a. Undertake a continuous review of the effectiveness of all waste minimization instruments, and identify potential new instruments that could be used and techniques by which instruments could be made operational at the country level. Guidelines and codes of practice should be developed.

b. Promote waste prevention and minimization as the principal objective of national waste management programmes.

c. Promote public education and a range of regulatory and non-regulatory incentives to encourage industry to change product design and reduce industrial process wastes through cleaner production technologies and good housekeeping practices and encourage industries and consumers to use types of packaging that can be re-used, in particular refillable and recyclable packaging.

d. Execute, in accordance with national capacities, demonstration and pilot programmes to optimize waste minimization instruments.

e. Establish procedures for adequate transport, storage conservation and management of agricultural products, food stuffs and other perishable goods in order to reduce loss of these products, which results in the production of solid waste. ›

f. (Derived from p. 14 h) ‹ [Facilitate the transfer of waste reduction technologies to industry and establish concrete national targets for effluents and solid waste and for raw material use and energy consumption.] ›

Human Resources Development:

16. Human resources development for waste minimization should be targeted not only at professionals in the waste management sector but also seek to obtain the support of citizens and industry. Human resources development programmes must, therefore, aim to raise consciousness, educate, and inform concerned groups.

(Derived from p. 13) ‹ Countries should:

Incorporate within school curricula the principles and practices of preventing and minimizing wastes and the environmental impacts of waste. ›

B. MAXIMIZING SAFE WASTE REUSE[2]

Basis for action

17. ** (WG.II/L.19/Add.1/Rev.1, p. 15) ‹ The exhaustion of traditional disposal sites, stricter environmental controls governing waste disposal, and increasing quantities of more persistent wastes have all contributed to a rapid increase in the cost of waste disposal services. Costs could double or triple by the end of the decade. Current disposal practices pose a threat to the environment. As the economics of waste disposal services change, waste recycling and resource recovery are becoming increasingly cost-effective. Future waste management programmes should take maximum advantage of resource-efficient approaches to management. › **

Objectives

18. (Derived from p. 16, 17, 18) ‹ To strengthen and increase national waste recycling systems.

19. To create a model internal waste recycling programme for waste streams including paper within the United Nations System.

20. To make available information, techniques and appropriate policy instruments to encourage and make operational waste recycling schemes. ›

** (p. 19) ‹ [Some targets of the programme could include:]

a. [By [2000] [ensure]/[promote] sufficient [financial and technological capacities at the regional, national and local levels] national and local regional capacity to implement waste recycling policies and actions.]

b. By [2010] all industrialized countries and by [2010] all developing countries should have a national programme including to the extent possible [concrete] targets for efficient waste recycling. › **

Activities

Management-related:

21. National governments and institutions and non-governmental organizations together with consumer, women, and youth groups, in collaboration with appropriate organizations of the United Nations, should launch programmes to demonstrate and make operational enhanced waste recycling. These programmes should, wherever possible, build upon existing or planned activities and should:

a. Develop and strengthen national capacity to recycle an increasing proportion of wastes.

b. Review and reform national waste policies to provide incentives for waste recycling.

c. Develop and implement national plans for waste management that take advantage of, and give priority to, waste recycling.

Data and Information:

22. (Derived from p. 20) ‹ Information and research is required to identify promising socially-acceptable and cost-effective forms of waste recycling relevant to each country. For example, supporting activities undertaken by national and local governments in collaboration with the United Nations and other international organizations should include:

a. Undertake an extensive review of options and techniques for recycling all forms of municipal solid wastes. Policies for recycling should be made an integral component of national and local waste management programmes.

b. Assess the extent and practice of waste recycling operations currently undertaken and identify ways by which these could be increased and supported.

c. Increase funding for research pilot programmes to test various options for recycling, including the use of small-scale, cottage-based recycling industries; compost production; treated wastewater irrigation; and energy recovery from wastes.

d. Produce guidelines and best practices for waste recycling.

e. Intensify efforts, at collecting, analyzing and disseminating, to key target groups, relevant information on waste issues. Special research grants could be made available on a competitive basis for innovative research projects on recycling techniques. ›

International and Regional Co-operation and Co-ordination:

23. The international support agencies in general, and appropriate United Nations organizations, in particular, should cooperate with governments

in generating the necessary information and providing the necessary stimulus for encouraging waste recycling in countries. In particular, the international community should:

a. Undertake in cooperation with national governments a periodic review of the extent to which countries recycle their wastes.

b. Review the effectiveness of techniques and approaches to waste recycling and ways of enhancing their application in countries.

c. Review and update international guidelines for the safe reuse of wastes

Means of Implementation

Financial and Cost Evaluation:

24. If all countries devote one per cent of waste related municipal revenues to safe waste reuse schemes at current rates it would mean annual worldwide expenditures of about US$ 8 billion of which US$ 2,3 billion would be required exclusively for reutilizing solid wastes. It is proposed that the international community should direct US$ 0,85 billion to accelerate safe waste reuse in developing countries, of which US$ 0,25 billion relates to solid wastes.

25. It is proposed to increase funding to international organizations to enable them to support these efforts by about US$ 5 million annually. Half of this relates to solid wastes.

Scientific and Technological Means:

26. (Derived from p. 22) ‹ The transfer of technologies should support waste recycling and reuse:

a. Include the transfer of recycling technologies, such as machinery for reusing plastics, within bilateral and multilateral technical co-operation and aid programmes.

b. Develop and improve existing technologies, especially indigenous technologies, and facilitate their transfer under on-going regional and inter-regional technical assistance programmes.

c. [Facilitate technology transfer for waste recycling by exempting such technologies from import taxes and other restrictions.] ›

27. ** (p. 21) ‹ Incentives for waste recycling are numerous. Countries could consider the following options to encourage industry, institutions, commercial establishments and individuals to recycle wastes instead of disposing of them:

a. Offer incentives to local and municipal authorities that recycle the maximum proportion of their wastes.

b. Provide technical assistance to informal waste recycling operations.

c. Apply economic and regulatory instruments, including tax incentives to support the principle that generators of wastes pay for their disposal.

d. Provide legal and economic conditions conducive to investments in waste recycling.

e. Implement specific mechanisms such as deposit/refund systems as incentives for recycling.

f. Promote the separate collection of recyclable parts of household wastes.

g. Provide incentives to improve the marketability of technically recyclable waste.

h. Encourage the use of recyclable materials, particularly in packaging, where feasible.

i. Encourage the development of markets for recycled goods by establishing programmes. › **

Human Resources Development:

28. (Derived from p. 23) ‹ Training will be required to reorient current waste management practices to include waste recycling. Governments, in collaboration with United Nations international and regional organizations should undertake the following indicative list of actions:

a. Include waste recycling in in-service training programmes as integral components of technical co-operation programmes on urban management and infrastructure development.

b. Expand training programmes on water supply and sanitation to incorporate techniques and policies for waste recycling.

c. Include the advantages and civic obligations associated with waste recycling in school curricula and relevant general educational courses.

d. Establish NGOs, community-based organizations, women, youth and public interest group programmes in collaboration with local municipal authorities to mobilize community support for waste recycling through focused community-level campaigns. ›

Capacity Building:

29. (Derived from p. 24) ‹ Capacity building to support increased waste recycling should focus on the following areas:

a. Make operational national policies and incentives for waste management.

b. Enable local and municipal authorities to mobilize community support for waste recycling by involving and assisting informal sector waste recycling operations and undertaking waste management planning which incorporates resource recovery practices. ›

C. PROMOTING SAFE WASTE DISPOSAL

Basis for action

30. ** (p. 25) ‹ Even when wastes are minimized, some wastes will still remain. Even after treatment, all discharges of wastes have some residual impact on the receiving environment. Consequently, there is scope for improving waste treatment and disposal practices such as, for example, avoiding the discharge of sludges at sea. In developing countries the problem is of a more fundamental nature: less than 10 percent of urban wastes receive any form of treatment and only a small proportion of treatment is in compliance with any acceptable quality standard. Faecal matter treatment and disposal should be accorded due priority given its potential threat to human health. › **

Objectives

31. (Derived from p. 26, 27) To treat and dispose safely a progressively increasing proportion of the generated wastes.

[Some targets of the programme could include]/[Policies could include]:

a. By [2000] all countries should establish waste treatment and disposal quality criteria, objectives and standards based on the nature and assimilative capacity of the receiving environment.

b. By [2000] countries should establish sufficient capacity to undertake waste-related pollution impact monitoring and conduct regular surveillance [including epidemiological surveillance].

c. By [1995], industrialized countries and by [2000] developing countries should ensure that at least 50 percent of all sewage, wastewaters and solid wastes are treated or disposed of [in conformity with environmental and health quality criteria].

d. By [2025] countries should dispose of all sewage, wastewaters and solid wastes [in conformity with internationally agreed and accepted environmental quality guidelines.] ›

Activities

Management-related:

32. National governments and institutions and non-governmental organizations together with industries, in collaboration with appropriate organizations of the United Nations should launch programmes in all parts of the world to improve the control and management of waste-related pollution. These programmes should, wherever possible, build upon existing or planned activities and should:

a. Develop and strengthen national capacity to treat and safely dispose of wastes.

b. Review and reform national waste management policies to gain control over waste-related pollution.

c. (** p. 29 a) ‹ [Each and every state should provide an environmentally sound solution, for the wastes it produces within its own territory, without it being acceptable to be exported to third countries or disposing it in areas, which are not subject to state sovereignty]. › **

d. (Derived from p. 29 g) ‹ [Develop human wastes management plans giving due attention to the development and application of appropriate technologies and the availability of resources for implementation]. ›

Data and Information

33. (Derived from p. 28) ‹ Standard setting and monitoring are two key elements essential for gaining control over waste-related pollution. The following specific activities are indicative of the kind of supportive actions that could be taken by international agencies such as UNCHS (Habitat), UNEP and WHO.

a. Assemble and analyze the scientific evidence and pollution impacts of wastes in the environment in order to formulate and disseminate recommended international scientific criteria and guidelines for environmentally sound management of solid wastes.

b. Establish national and, where relevant, local environmental quality standards based on international scientific criteria and guidelines.

c. Include within technical co-operation programmes and agreements the provision for monitoring equipment and requisite training for its use. ›

d. (Derived from p. 30 a) ‹ [Establish an information clearing house activities with extensive networks at the regional, national and local levels to collect and disseminate information on all aspects of waste management, including safe disposal]. ›

International and regional co-operation and co-ordination:

34. The international community, as a whole, and especially appropriate United Nations organizations such as UNCHS (Habitat), UNEP, WHO and UNIDO and professional associations, should generate the necessary information and provide the necessary stimulus for encouraging the treatment and safe disposal of wastes in all countries. In particular, the international community should:

a. Identify, develop and harmonize methodologies and environmental quality and health guidelines for safe waste discharge and disposal.

b. Review, keep abreast of developments and disseminate information on the effectiveness of techniques and approaches to safe waste disposal and ways of supporting their application in countries.

Means of Implementation

Financial and Cost Evaluation:

35. Safe waste disposal programmes are relevant to both developed and developing countries. In developed countries the focus is on improving facilities to meet higher environmental quality criteria, while in developing countries considerable investment is required to build new treatment facilities.

36. Safe waste disposal programmes require a total annual investment in developing countries of US$ 15.1 billion of which US$ 2.7 billion is required exclusively for the safe disposal of solid wastes. If the international community provided one-third of this amount this would require about US$ 3,4 billion annually of which about US$ 1 billion relates to solid wastes.

37. About US$ 5 million annually would be required to strengthen the capacity of international organizations to support these efforts. Half of this relates to solid wastes.

Scientific and Technological Means:

38. (Derived from p. 30 b, c) ‹ Scientific guidelines and research on various aspects of waste-related pollution control will be crucial for achieving the objectives of this programme. Governments, municipalities and local authorities with appropriate international co-operation should:

a. Prepare guidelines and technical reports on subjects such as the integration of human settlements land use planning with waste disposal; environmental quality criteria and standards; waste treatment and safe disposal options; industrial waste treatment; and landfill operations.

b. Undertake research on critical subjects such as low-cost, low-maintenance wastewater treatment systems, safe sludge disposal options, industrial waste treatment and low ecologically-safe waste disposal technologies. These should be supported by the international donor community. ›

c. Transfer technologies on industrial waste treatment processes through transnational corporations and bilateral and multilateral technical co-operation programmes.

d. (Derived from p. 29 e, f) ‹ Focus, [as a first priority], on the rehabilitation, operation and maintenance of existing facilities and [concentrate] technical assistance on improved maintenance practices and techniques; followed by the planning and construction of waste treatment facilities.

e. [Establish programmes to ensure the source segregation and safe disposal of the hazardous components of municipal solid waste]. ›

f. Ensure the concomitant investment and provision of waste collection facilities with the provision of water services and an equal parallel investment and provision of waste treatment facilities.

Human Resources Development:

39. Training would be required to reorient current waste management practices to include safe collection and waste disposal. The following is an indicative list of actions that should be undertaken by Governments in collaboration with international agencies:

a. (Derived from p. 29 d) ‹ Provide both formal and in-service training focused on pollution control, waste treatment and disposal technologies, and operations and maintenance of waste-related infrastructure. Inter-country staff exchange programmes should also be established. ›

b. Undertake requisite training on waste-related pollution monitoring and control enforcement.

Capacity Building:

40. (Derived from p. 29 b, c) ‹ Institutional reforms and capacity building will be indispensable if countries are to be able to quantify and mitigate waste-related pollution. Activities to achieve this objective should include:

a. Create and strengthen independent environmental control bodies at national and local levels. International organizations and donors should support needed manpower skill upgrading and provision of equipment.

b. Empower pollution control agencies with the requisite legal mandate and financial capacities to carry out their duties effectively. ›

D. EXTENDING WASTE SERVICE COVERAGE[3]

Basis for Action

41. (Derived from p. 32) ‹ By the end of the century over 2.0 billion people will be without access to basic sanitation, and an estimated half of the urban population in developing countries will be without adequate solid waste disposal services. As many as 5.2 million people, including 4 million children under 5 year of age die each year from waste-related diseases. The health impacts are particularly severe for the urban poor. The health and environmental impacts of inadequate waste management, however, go beyond the unserved settlements themselves and result in water, land and air contamination and pollution over a wider area. Extending and improving waste collection and safe disposal services are crucial to gaining control over this form of pollution. ›

Objectives

42. (Derived from p. 33) ‹ The overall objective of this programme is to provide health-protecting, environmentally-safe waste collection and disposal services to all people. Specific supportive objectives should be:

a. By [2000] all countries should have necessary technical, financial and human-resource capacity to ensure the provision of waste collection services commensurate with needs;

b. By [2025] all urban populations should be provided adequate waste services;

c. By [2050] full urban waste service coverage should be maintained and full rural coverage with sanitation achieved. ›

Activities

Management-related:

43. (Derived from p. 37 d) ‹ [Considerable financial and technical co-operation will be required to increase coverage. National governments, in collaboration with the United Nations, relevant international organizations and multilateral financial institutions could undertake many activities of which the following are a sample:

a. Establish financing mechanisms for waste management service development in deprived areas including appropriate modes of revenue generation.

b. Apply polluter pays principle by setting waste management charges at rates that reflect the true economic costs of providing the service and ensure that those that generate the wastes pay the full cost of disposal in an environmentally safe way.

c. Institutionalize participatory planning and implementation procedures that involve communities, especially women.] ›

Data and Information:

44. Governments in collaboration with the United Nations and international agencies should undertake the following:

a. Develop and apply methodologies for country-level waste monitoring.

b. Undertake data gathering and analysis to establish national targets and monitor progress.

c. Input information into a global information system building upon existing systems.

d. Strengthen the activities of existing information networks to disseminate focused information on the application of innovative and low-cost alternatives for waste disposal to targeted audiences.

International and regional co-operation and co-ordination:

45. Many United Nations and bilateral programmes exist which seek to provide water supply and sanitation services to the unserved. The Water Supply and Sanitation Collaborative Council Global Forum currently acts to co-ordinate development and encourage co-operation. Even so, given the ever increasing numbers of unserved urban poor populations and the need to address, in addition, the problem of solid waste disposal, additional mechanisms are essential to ensure accelerated coverage of urban waste disposal services. The international community, in general, and select United Nations Organizations in particular, should:

a. (Derived from p. 38 c) ‹ Launch a Settlement Infrastructure and Environment Programme following the Conference to co-ordinate the activities of all United Nations agencies involved in this area and include a clearing house for information dissemination on all waste management issues. ›

b. Undertake and systematically report on progress in providing waste services to those without.

c. Review effectiveness of techniques and approaches to increasing coverage and identify innovative ways of accelerating the process.

Means of Implementation

Financial and Evaluation:

46. Extending waste service coverage to unserved populations is relevant mainly to developing countries. A total annual investment for extending waste service coverage in accordance with the schedule indicated in programme objectives is estimated at US$ 7.5 billion of which US$ 1.6 billion pertains to solid waste service expansion. Assuming one- third of these costs were financed by the international community, the concessional assistance requirements would be about US$ 2,6 billion of which US$ 0,6 billion relates to solid wastes services.

47. About US$ 8 million annually will be needed to strengthen international organizations capacity to support these efforts. Half of this relates to solid wastes.

Scientific and Technological Means:

48. National governments and institutions and non-governmental organizations together in collaboration with appropriate organizations of the United Nations should launch programmes in different parts of the developing world to extend waste services to the unserved populations. These programmes should, wherever possible, build upon and reorient existing or planned activities.

49. (Derived from p. 36, 37 a) ‹ [Policy changes at the national and local levels could enhance the rate of waste service coverage extension. These should include the following:

a. Give full recognition and use the full range of low-cost options for waste management including where appropriate their institutionalization and incorporation within codes of practice and regulation.

b. Assign high priority to the extension of waste management services to all settlements irrespective of their legal status giving due emphasis to meeting the waste disposal needs of the unserved, especially, the unserved urban poor.

c. Integrate the provision and maintenance of waste management services with other basic services such as water supply and stormwater drainage.] ›

50. (Derived from p. 38 a, b, d) ‹ Research activities could be enhanced. Countries, in co-operation with appropriate international organizations and NGOs should, for instance:

a. Find solutions and equipment for managing wastes in areas of concentrated populations. In particular, there is a need for appropriate refuse storage and collection systems and cost-effective and hygienic human waste disposal options.

b. Prepare and disseminate guidelines, case studies, policy reviews and technical reports on appropriate solutions and modes of service delivery to unserved low-income areas.

c. Launch campaigns to encourage active community participation involving women and youth groups in waste management, particularly, household waste. ›

d. (Derived from p. 37 e) ‹ Undertake inter-country transfer of relevant technologies, especially technologies for high density settlements.] ›

Human Resources Development

51. (Derived from p. 39, 40) ‹ International organizations, national and local governments in collaboration with NGOs, should provide focused training on low-cost waste collection and disposal options and, particularly, techniques for their planning and delivery. Inter-country staff exchange programmes among developing countries could form part of such training. › Particular attention should be given to upgrading the status and skills of management-level personnel in waste management agencies.

52. (Derived from p. 40) ‹ Improvements in management techniques are likely to yield the greatest returns in terms of improving waste management service efficiency. The United Nations, international organizations and financial institutions should in collaboration with national and local governments, develop and make operational management information systems (MIS) for municipal record keeping and accounting and for efficiency and effectiveness assessment. ›

Capacity Building:

53. National governments and institutions and non-governmental organizations, with the collaboration of appropriate organizations of the United Nations should develop capacities to implement programmes to provide waste collection and disposal services to the unserved populations. Some activities under the programme include the following:

a. Establish a special unit within current institutional arrangements to plan and deliver services to the unserved poor communities with their involvement and participation.

b. Make revisions to existing codes and regulations to permit the use of the full range of low-cost alternative technologies for waste disposal.

c. Build institutional capacity and procedures to undertake service planning and delivery.

EXPLANATORY NOTES

1. Sewage-related issues contained in this document presently overlap with others identified under Programme Area D - Drinking Water Supply and Sanitation and Programme Area E - Water and Sustainable Urban Development of Chapter 10 - Protection of the Quality and Supply of Freshwater Resources of Agenda 21. Sewage-related activities presented here must therefore, be seen together with those contained under the chapter on freshwater. For purposes of avoiding duplication , all sewage-related costings have been reflected under the chapter on freshwater.

2. Programme title "MAXIMIZING WASTE REUSE" has been changed to "MAXIMIZING SAFE WASTE REUSE".

3. Programme title "EXTENDING WASTE DISPOSAL SERVICE COVERAGE" has been changed to "EXTENDING WASTE SERVICE COVERAGE".

4. [Throughout this document "Governments" also refers to the European Community acting in the sphere of its competence.]